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THE RELATIONSHIP BETWEEN ACADEMIC STRESS AND EATING BEHAVIOR AMONG COLLEGE STUDENTS

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Abstract

Finding of current research aims to investigate the correlation between academic stress and eating behavior among college students in Saito University College, Malaysia. This study was a correlational design that used quantitative methods for data collection. The research was conducted among 128 college students in Saito University College recruited from different program and selected from year one to year three. Survey of College Academic Stressors (SCAS) was administered to measure stress related to academic factors while eating behaviour was assessed using Adult Eating Behaviour Questionnaire (AEBQ). Prior to conduct the research and collecting the data, ethical approval was obtained from the management board of the college. Statistical program of SPSS was used to analyse data collected. As for result, it was found – as expected – that academic stress and eating behaviour were significantly correlated yet there were no significant difference among stress and eating behaviour with respect to gender and race. It was highly recommended that counselling staff of the University could provide appropriate intervention as well as adequate support for students experiencing stressful situation.

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1. INTRODUCTION

Life transitions from high school to college or university marks a distinct pace of students' life including their academic goals, lifestyles and careers [1, 2]. These stark transitions demand changes and adaptations in many aspects specifically learning, socialization, responsibilities, eating habits, time and financial management and others [3]. Although many contend that entering new phase as collegian is one of the most delightful life passages, some find such phases to be completely challenging and stressful for series of adaptations, anxieties and cultural shocks encountered [2-4].

As such, college life has been frequently reported to be stressful [5-8]. People feel stress when they experience an unpleasant state with emotional arousal during conditions perceived as troublesome and highly demanding whereby those demands are greater than their coping resources in which they are able to generate [9-11]. Stress also can be understood as biological, emotional and behavioural response to certain circumstances called *stressors* identified as events, problems, and pressures that potentially provoke stress [12, 13]. Krishan Lal [14] noted that academic stress is defined as mental distress associated with academic-related frustration and demands. Accordingly, students will have to face these demands like examinations, assignments, presentation including fulfilling parental expectation with respect to academic result along

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their studies. These demands may tax and exceed their personal and social resources in which eventually enable them to be stressed [15].

With respect to that matter, many studies ascertained that academic stress affects negatively on psychological and physical side of students. In a research carried out in Saudi Arabia and Egypt, El Gilany et al [16] pointed out that stress stimulated the development of anxiety and depression among medical students. In 2005, Dahlin et al [17] conducted a cross-sectional study in Sweden and reported that the prevalence of depression symptoms among medical students was 12%, and around 2.7% of them have made an attempt of suicide. Aside from this, symptom of somatoform disorder has been also delineated in relation to academic stress [18]. In adjacent to those issues, Shaikh et al [19] suggested that level of stress is partially influenced by the access toward fine coping strategies that can eradicate symptoms of stress. Coping strategies are defined as methods in which people use to deal with threatening and stressful situation [20]. Coping with stress varies among people; it depends on types of stress, personality and circumstances [21]. Relating to that matter, despite being subjected and susceptible to change, eating behaviour has been recognized as a method of coping known as emotional coping [22, 23].

While eating and snacking could be a short escape to alleviate stressful situation, such condition could incite and contribute health-related problem like obesity, unhealthy eating habit, and customs which change healthy behaviour [22, 24]. Additionally, there are some findings suggested that stress could increase snacking behaviour especially high-sugar food which can lead to more detrimental effect. Furthermore, Emily et al [25] noted that such inclination could promote "obesogenic environment which refers to any environment promoting unhealthy lifestyle, gaining weight and provides non conducive condition for losing weight [26].

Accordingly, series number of studies showed that obesity prevalence among Malaysian increased very fast in the last decade of 20th century and several factors can be identified as the contributor the increased number comprising of rising food availability, lifestyle, cultures, personal interest and others [27]. In the same manner, according to article of New Strait Times "Malaysians most obese in region" explained that Malaysia has the dubious name as the highest rate of obesity in Southeast Asia which covered Malaysia, Singapore, Indonesia, Thailand, the Philippine and Vietnam [28]. Referring to Lim [27], women are more obese than men, Malays and Indian people are more obese than Chinese. Additionally, Farezza [28] stated that Malaysia had the largest number of productive years disappearances due to obesity among female teenagers; this occurrence is also supported by some findings which mention that working adult and college students also gained high number of obesity. Hence, there are needs to understand and cater this problem from keep happening, if these problems remain untouched and unsettled, Malaysia might be later known as having most number of death among young adult as result from obesity.

2. LITERATURE REVIEW

A vast amount of studies related to association between stress and eating behaviour have been well-documented in various articles and explored from distinct factors [22]. Seeing from psychological domains, Scott and Johnstone [22] outlined that eating behaviour is a method of coping included into emotional coping strategy, they added that people have inclination to change their eating behaviour when believing that they are stressed. The degree to which people change their eating behaviour depends on eating behaviour profile and personality whereby people who has intention to restrict food consumption to prevent gaining weight (restrained eating), tend to increase their eating consumption when facing stressing situation compared to those who are unrestrained [22, 29, 30]. While psychological domains contribute to

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development of the relationship between these two variables, physiological sector also are found to be influencing [22]. In a research carried by Raspopow et al [23] about emotional eating during stressful situation, the finding proposed that emotional eaters who use food or eating as avoidant coping mechanism and employ emotion-focused response toward stress, might be affected by hormonal responses which does not happen among non-emotional eaters. Subsequently, academic stress is also delineated to have influence on eating behaviour and blood lipids [31], relation with night-eating habit [32] as well as depressive mood [33] and others.

Despite of being well-studied, the areas of academic stress and its relation toward eating habits are still in need to be explored specifically in Southeast Asian countries like here in Malaysia for a wide range of reasons. As stated earlier that Malaysia is among countries in Asia with the highest rate of obesity, therefore, it is relevant to conduct research to hopefully tackle the problem through academic domains. In addition, academic stress may be reduced if the sources are identified so that coping mechanism can be mobilized [10]. Following that, frequently reported that lack of support, financial difficulties, academic-related demands are the major contributor in academic stress among students [10], yet still no abundant evidence related to Malaysian context. Furthermore, although much has been written regarding stress among college students [34-36] or in-depth study about eating behaviour among Malaysian students in college [37, 38], tangible evidences concerning their relations or which stressor that is highly correlated in eating behaviour or vice versa seem to be in demands for further and in-depth exploration. For that matter, motivated by the mentioned facts, this study will focus on investigating stressor existing within academic environment, eating pattern, and their associations. Subsequently, this study is aimed to answer two following research questions: Is there any significant correlation between academic stress and eating behaviour? And are there any significant differences in academic stress and eating behaviour with respect to gender and race?

3. METHOD

This was a correlational study using quantitative data collection; survey was conducted among 128 college students in Saito University College. Students were recruited from different program and randomly selected from year one to year three and data collection period was conducted around 10 days using online questionnaire. The survey took around 45 minutes to 1 hour to be completed by the respondents. Prior to conducting the survey, ethical approval was gained from the board management of the college including written informed consent from the respondents. After data collection, gained data were checked for completion and those found incomplete were replaced in the next days. As for pilot study, preliminary survey was administered and pilot-tested, 30 students were chosen from different college, no adjustments were made so that data collection used the very similar questionnaire.

Online questionnaire was administered anonymously to assess academic stress and eating behaviour and was structured into three parts. The first section covers demographic information including age, gender, years of study and parent income. Second and Third section measured academic stress and eating behaviour respectively. Survey of College Academic Stressors (SCAS) by Calaguas [39] was administered to measure Stress-related academic factors. This tool has eight sub-scales: enrolment and admission related – subject-related – teacher related – classmate-related – schedule-related – classroom-related – financial-related and expectation-related. This 67 Likert-Scale questions asked respondents to rate how stressful the events listed in certain way like Not at all Stressful (1) – Mildly Stressful (2) – Moderately Stressful (3) – Severely Stressful (4). With regard to its reliability, the survey has been proven to be reliable at 0.948 for all items and signifies high internal consistency of its subscale from 0.748 to 0.898.

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To measure eating behaviour, Adult Eating Behaviour Questionnaire (AEBQ) from University College London by Hunot et al [40] was used, this tool has been used in various studies related eating behaviour in several populations such as bariatric surgery candidate [41], obese children [42] and many more. This likert-scale questionnaire has 37 items and 7 components including three scales food approaches (hunger, food responsiveness and enjoyment of food) and four scales of food avoidance (satiety responsiveness, emotional under-eating, food fussiness and slowness in eating). In measuring eating behaviour, respondents need to rate certain conditions in which they experience like strongly disagree = 1, disagree = 2, neither agree nor disagree = 3, agree = 4, strongly agree = 5. This instrument has 4 reversed items hence during calculations, those numbers would be altered like strongly disagree = 5, disagree = 4 and so on.

Data were analysed using SPSSv20, the prevalence of academic stress and eating behaviour among college students was scrutinized using descriptive statistics including its percentage. Meanwhile, the relationship between academic stress and eating behaviour was investigated using person correlation coefficient analysis and the differences between both academic stress and eating behaviour with respect to gender and race were analysed using independent sample t-test and 1-way Annova respectively.

4. RESULT

4.1. Characteristics of Variable in Questions

Regarding gender of respondents, male was slightly higher than female at 52.8% . Majority of respondents was students aged 18 accounting for more than half of population (53.6%) while the smallest portion was students aged 17 and 23 accounting for similarly 1.6%. Malay was the predominant respondents (70%), in which continued by other races like Bajau, Suluh, Tidong and others with 18.4%. Indian and Chinese were the lowest for 7.2 and 4.0 in percentage. Meanwhile, more than one-half of participants were reported to be in their first year of study. Findings can be found in Table 1

4.2. Pervasiveness of Variables of Interest

The summary of prevalence of academic stress and eating behaviour can be found in Table 2. Of all academic stressor, Subject-related stressors were identified to be the most dominant at 43.2960, parental or personal expectation was the second highest at 25.6096. Following that was classroom related stress which accounting for 21.1088 and was slightly higher than schedule-related stress at 19.1625. Meanwhile, enrolment and admission gained 14.3360 which were continued by classmate-related problem (11.6912). The least two sub-scale of academic stressor were teacher and financial issues with 5.3653 and 5.4987.
With regard to eating behaviour, hunger scale and food fussiness were dominating at 11.4768 and 11.3360. Emotional over eating was gently lower than the previous two at (10.8880). After which, there were three factors obtained almost similar number: emotional under eating, safety responsiveness and food responsiveness. Lastly, the minor scale was enjoyment of food at 5.4240.

4.3. Association of Variables in Questions

This part was designed to answer the research question whether academic stress and eating behaviour were significantly correlated or not. Referring to Table 3, the Pearson Correlation Coefficient between Academic Stress and Eating Behaviour was .001 which determined that the relationship between first and

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second variable was statistically significant. Therefore, it can be said that the there was a significant association among these two variables in questions.Meanwhile, the second and third questions tested if there were significant differences in academic stress and eating behaviour with respect to gender and race of respondents. It was hypothesised that there were significant difference in variables of interest according to gender and races. However, none of the respondents' scores in academic stress and eating behaviour differed significantly according to their gender (Table 4) and races (Table 5).

Table 1 Respondents' Baseline Characteristics

Variables		**N**	**%**
Gender			
	Male	66	52.8
	Female	59	47.2
Age			
	17	2	1.6
	18	67	53.6
	19	32	25.6
	20	12	9.6
	21	7	5.6
	22	3	2.4
	23	2	1.6
Race			
	Malay	88	70.4
	Chinese	5	4.0
	Indian	9	7.2
	Others	23	18.4
Years of Study			
	1st Year	84	67.2
	2nd Year	34	27.2
	3rd Year	7	5.6

Table 2 Pervasiveness of Academic Stress and Eating Behaviour

Variables	**Mean**	**SD**
Academic Stress		
Enrolment and Admission	14.3360	1.91769
Subject-related	43.2960	9.03775
Teacher-related	5.3653	1.18035
Classmate-related	11.6912	2.36186

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Schedule-related	19.1624	3.53409
Classroom-related	21.1088	3.82856
Financial-related	5.4987	1.25697
Expectation	25.6096	2.93270
Eating Behaviour		
Hunger	11.4768	4.60888
Food Responsiveness	9.0600	1.93373
Emotional Over Eating	10.8880	2.23959
Enjoyment of Food	5.4240	1.90471
Satiety Responsiveness	9.3340	2.73473
Emotional Under Eating	9.6784	2.34272
Food Fussiness	11.3360	2.55148
Slowness In Eating	8.6380	1.93140

Table 3 Correlation between Academic Stress and Eating Behaviour

Variables		**Academic Stress**	**Eating Behaviour**
Academic Stress	Pearson Correlation	1	.295**
	Sig. (2-tailed)		.001
	N	125	125
Eating Behaviour	Pearson Correlation	.295**	1
	Sig. (2-tailed)	.001	
	N	125	125

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4 Differences of Academic Stress and Eating Behaviour according to gender and race

Variables	**Independent T-Test**	**Annova**
Academic Stress	.762	.025
Eating Behaviour	.324	.638

5. DISCUSSION

Current study is purposed to examine the association between academic stress and eating behaviour among college students. The result indicated that predominant stressor was related to subjects like assignments, presentations, discussions and others. This was consistent with several past studies that several students were stressed because of their inability to do well during assignments or presentation [4, 13, 43].

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Meanwhile, regarding their eating behaviours, it was indicated students' eating behaviour were principally linked to meet their bodily urges (hunger), but surprisingly, second highest number depicted that college students were fussy while their eating. It might be due to various factors like boredom, curiosity to eat new menus and many more. Fussy eating or inconsistency in eating is apparently consistent pattern of toddler behaviour [44] which was surprisingly occurred among adolescent. Nevertheless, another research by Calam, et al. [45] stated that teenagers also tend to be fussy in their eating specifically girls. Further finding of current research showed that there was a positive relationship between academic stress and eating behaviour. This result was obtained in similar studies [22, 32] and supported another finding that stress moreover chronic stress seems to be associated with greater preferences for energy consumption like sugar and fat while eating, likewise, it may result in the development of obesity [24, 30, 46].

As eating behaviour is considered to be a way of coping strategies to tackle stressful situation [22], this research supported previous findings regarding this association. Therefore, future research pertaining of relationship between academic stresses and coping strategies is highly encouraged. Following that, the result indicated that there were no significant differences associated with sex whereby it suggested that both genders were identically experiencing similar stressful situations and eating behaviour. However, this finding seems to contradict the result of past studies stating that relationship between stress and eating depends on gender and type food available [47]. Perhaps, the higher number of male over female respondents prevented full representation of sample and population which result in atypical pattern of stress and eating. It is also possible that current findings are particular to a private college and certain ages population versus the population of past studies [47]. Furthermore, the result also indicated that no significant differences are found with respect to races. Similar research which are based on races are still found to be rare, therefore further studies which focused on this matter also is highly suggested.

6. LIMITATION AND FUTURE DIRECTIONS

There are few limitation to the current study, first of all, it was related to sample size of population which limits representation of more potential population with similar characteristic as current study was conducted in a College University. Consequently, such modest sample size doesn't allow various assessments within this study. Secondly, the ratio difference of races of populations was quite higher whereby Malay population was much dominant in comparison to other races in which it could hinder the fine representation of every sample in population.

As for future studies, broaden number of respondents would allow for more accurate representation of population, allow various assessments and analysis. Additionally, more rigorous research relating to stressor, level of stress, in-depth discussion of every eating behaviour sub-scale could be used to gain more objective result in this study. Further, analysis of coping strategies used during stressful situation could be conducted as this particular subject is proven to be linked with stress in many ways [11].

This research clarified that stress and eating are correlated, and stress is seen to be relevant among college students. Inability to find fine way to cope with these stressful situations has a great potential to the development of eating and health problem, and eventually psychopathology [12, 48, 49]. Finally, through this finding, it was highly recommended that counselling staff of the University could provide appropriate intervention as well as adequate support for students experiencing stressful situation by firstly addressing the resources of the problems or the stressors, then applying the appropriate interventions to tackle predicted issues as discussed.

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